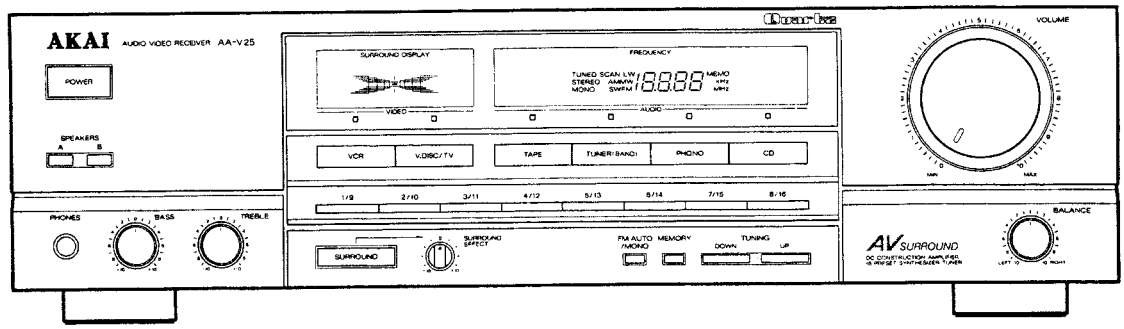
AA-V25L

AKAI SERVICE MANUAL



AUDIO VIDEO RECEIVER

MODEL AA-V25L

SPECIFICATIONS

AMPLIFIER SECTION

Power output	35 W + 35 W(8 ohms, 0.3 %)
Music power	200 W + 200 W
Power bandwidth	5 Hz to 40 kHz(0.5 %)
S/N	
Phono(MM)	70 dB
CD,Tape, etc.	90 dB
Residual noise	0.5 mV(8 ohms)
Channel separation	55 dB(1 kHz)
Damping factor	30(8 ohms, 1 kHz)
Required speaker impedance	
A or B	8 ohms to 16 ohms
A and B	16 ohms
Surround	8 ohms 16 ohms

PRE AMPLIFIER SECTION

Input sensitivity/Impedance	
Phono(MM)	2 mV/47 kohms
CD, Tape, etc.	150 mV/47 kohms
V.Disc/VCR(Audio)	150 mV/47 kohms
V.Disc/VCR(Vidio)	1 Vp-p/75 ohms
Output level/Inpedance	
Tape rec out	150 mV/1 kohms
VCR(Audio)	150 mV/1 kohms
Monitor/VCR(Vidio)	1 Vp-p/75 ohms
Frequency response	5 Hz to 80 kHz(-3 dB)
Tone control	
Bass	± 8 dB(100 Hz)
Treble	± 8 dB(10 kHz)
Phono max. input level	120 mV(MM)

TUNER SECTION

FM tuner	
Tuning frequency range	87.5 MHz to 108.0 MHz
Usable sensitivity	12.7 dBf
Quieting sensitivity (IHF,S/N=50 dB)	19.2 dBf(Mono)/40.2 dBf (Stereo)
Capture rasio	2.0dB
Selectivity(400 kHz)	60 dB
Image rejection	50 dB
IF rejection	80 dB
Suprious rejection	80 dB
AM suppression	50 dB
Sub carrier suppression	55 dB
S/N(IHF)	70 dB(Mono)/60 dB(Stereo)
Harmonic distortion	0.2 %(Mono)/0.4 %(Stereo)
Stereo separation(1 kHz)	40 dB
Frequency response	30 Hz to 15 kHz ± 1.0 dB

MW Tuner

Tuning frequency range	531 kHz to 1,602 kHz
Usable sensitivity (AM loop antenna)	300 µV/m
Selectivity	30 dB
Image rejection	45 dB
IF rejection	35 dB
S/N	40 dB
T.H.D	1.0 %

LW Tuner

Tuning frequency range	146 kHz to 353 kHz
Usable sensitivity (AM loop antenna)	800 µV/m
Selectivity	40 dB
Image rejection	45 dB
IF rejection	35 dB
S/N	35 dB
T.H.D	2.0 %
Power requirement	AC 220 V, 50 Hz for Europe except UK AC 240 V, 50 Hz for UK and Australia
Dimensions	425(W) x 124(H) x 325(D) mm (16.7 x 4.9 x 12.8 inches)
Weight	5.7 kg(12.5 lbs)

Standard accessories

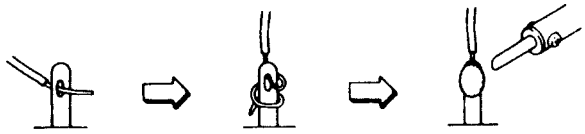
FM antenna	x1
AM loop antenna	x1
FM antenna plug	x1
Operator's manual	x1

*** For improvement purposes, specifications and design are subject to change without notice.**

★SAFETY INSTRUCTIONS

PRECAUTIONS DURING SERVICING

1. Parts identified by the ⚠ (*) symbol are critical for safety. Replace only with parts number specified.
2. In addition to safety, other parts and assemblies are specified for conformance with such regulations as those applying to spurious radiation.
   These must also be replaced only with specified replacements.
   Examples: RF converters, tuner units, antenna selector switches, RF cables, noise blocking capacitors, noise blocking filters, etc.
3. Use specified internal wiring. Note especially:
   1) Wires covered with PVC tubing
   2) Double insulated wires
   3) High voltage leads
4. Use specified insulating materials for hazardous live parts. Note especially:
   1) Insulation Tape
   2) PVC tubing
   3) Spacers (Insulating Barriers)
   4) Insulation sheets for transistors
   5) Plastic screws for fixing microswitch (especially in turntable)
5. When replacing AC primary side components (transformers, power cords, noise blocking capacitors, etc.), wrap ends of wires securely about the terminals before soldering.



6. Observe that wires do not contact heat producing parts (heatsinks, oxide metal film resistors, fusible resistors, etc.).
7. Check that replaced wires do not contact sharp edged or pointed parts.
8. Also check areas surrounding repaired locations.
9. Use care that foreign objects (screws, solder droplets, etc.) do not remain inside the set.

SAFETY CHECK AFTER SERVICING

After servicing, make measurements of leakage-current or resistance in order to determine that exposed parts are acceptably insulated from the supply circuit.
The leakage-current measurement should be done between accessible metal parts (such as chassis, ground terminal, microphone jacks, signal-input/output connectors, etc.) and the earth ground through a resister of 1500 ohms paralleled with a 0.15 μF capacitor, under the unit's normal working conditions. The leakage-current should be less than 0.5 mA rms AC.
The resistance measurement should be done between accessible exposed metal parts and power cord plug prongs with the power switch (if included) "ON". The resistance should be more than 2.2 Mohms.

★INFORMATION

SYMBOLS FOR PRIMARY DESTINATION

Alphabet indicates the destination of the units as listed below.

Symbols	Principal Destinations
A	USA
B	UK
C	Canada
E	Europe (except UK)
J	Japan
S	Australia
V	W. Germany only
U	Universal Area
Y*	Custom version

I. CONTROLS

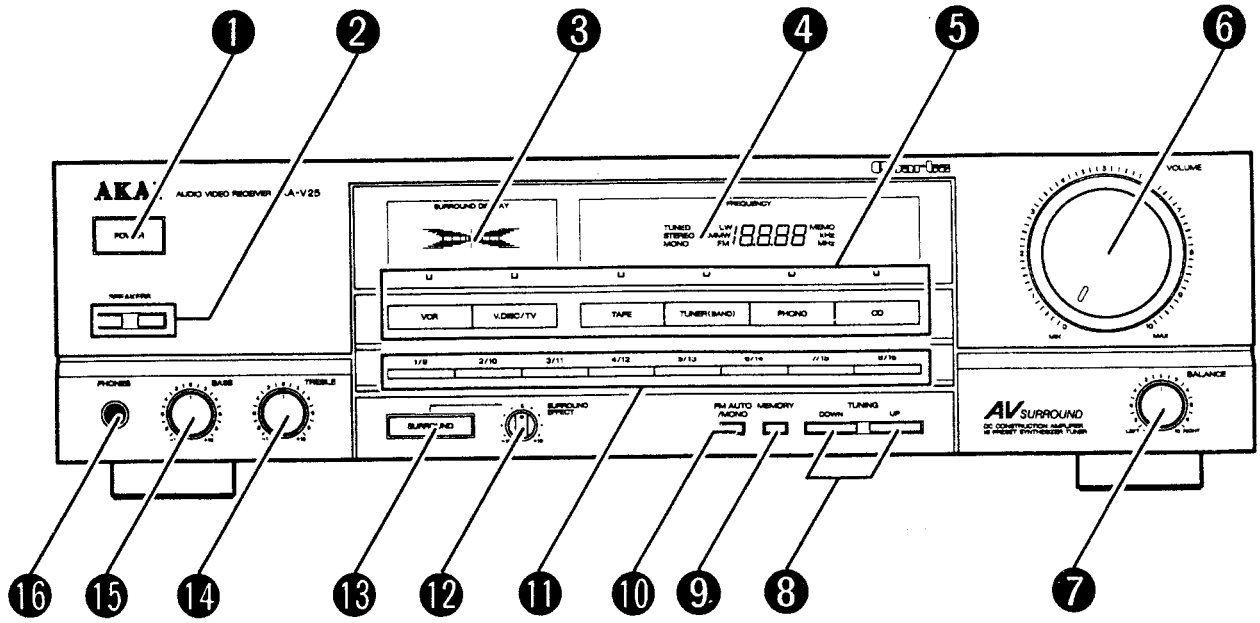


Fig. 1-1

❶ **POWER Button**
To turn the power on and off.

❷ **SPEAKERS A/B Switch (▬ ON/▬ OFF)**
To select the speaker system.
For headphone listening, set both switches to ▬. When using two pairs of speaker systems at the same time, set both switches to ▬.

❸ **SURROUND DISPLAY Indicator**
Tells you the surround system is engaged.

❹ **LC (Liquid Crystal) Display**
Tells you what the receiver is doing.

❺ **AUDIO and VIDEO Input Select Buttons (VCR, V.DISC/TV, TAPE, TUNER, PHONO, CD) and LED (Light Emitting Diode) Indicators**
To select the audio or video source you wish to play back.
Note
The tuning band can be selected by pressing the TUNER button repeatedly FM, MW and LW.

❻ **VOLUME Control**
To adjust the volume level.
The surround speaker level can be adjusted at the same time when the surround system is engaged.

❼ **BALANCE Control**
To adjust the left and right channel balance.
Normally set the control to I.

❽ **TUNING Control Button (UP/DOWN)**
To tune in a station.

❾ **MEMORY Button**
To store tuned in stations at preset station buttons.

❿ **FM Mode Button (FM AUTO/MONO)**
To select between the stereo and monaural mode during FM reception.

⓫ **Preset Station Buttons (1-8/9-16)**
To memorize and recall stations.

⓬ **SURROUND EFFECT Control**
To increase or decrease the surround effect. Set the control to its center click position for reference effect level during playback.

⓭ **SURROUND Switch**
To turn the surround system on and off.

⓮ **TREBLE Tone Control**
To adjust the high note (treble) level. When set to 0, the control is ineffective.

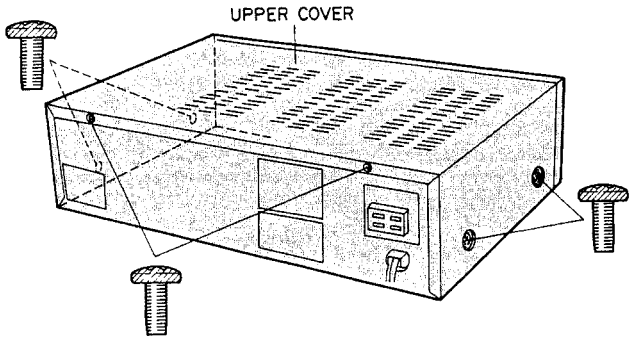
⓯ **BASS Tone Control**
To adjust the low note (bass) level. When set to 0, the control is ineffective.

⓰ **PHONES Jack**
For connection of headphones.

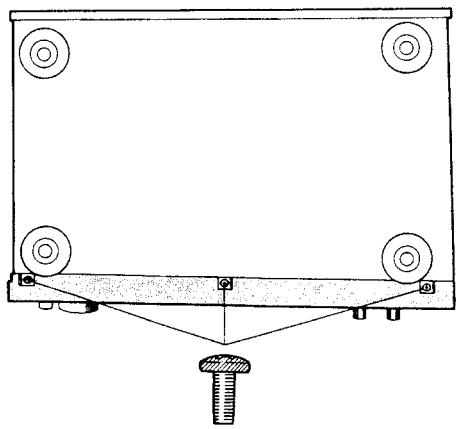
II. DISASSEMBLY

In case of trouble, etc necessiting dismantling in the order shown in the illustration. Reassemble in reverse order.

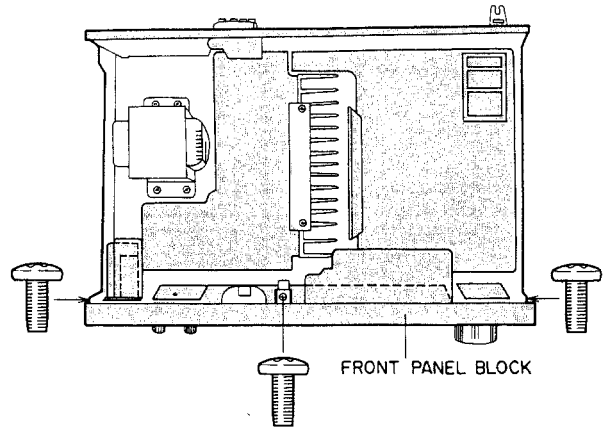
1. Removal of UPPER COVER



2. Removal of FRONT PANEL BLK

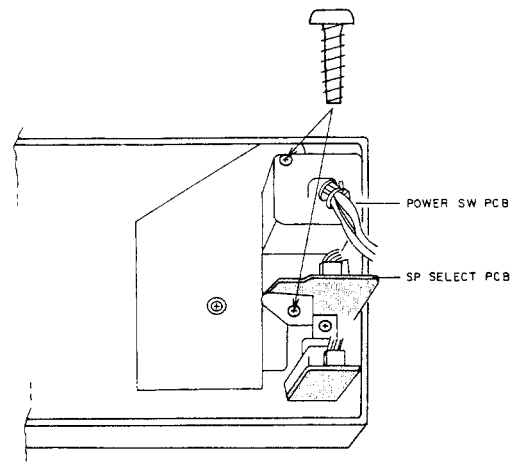


3.



* Disconnect all the wire connection between FRONT PANEL BLK and main chassis.

4.



III. PRINCIPAL PARTS LOCATION

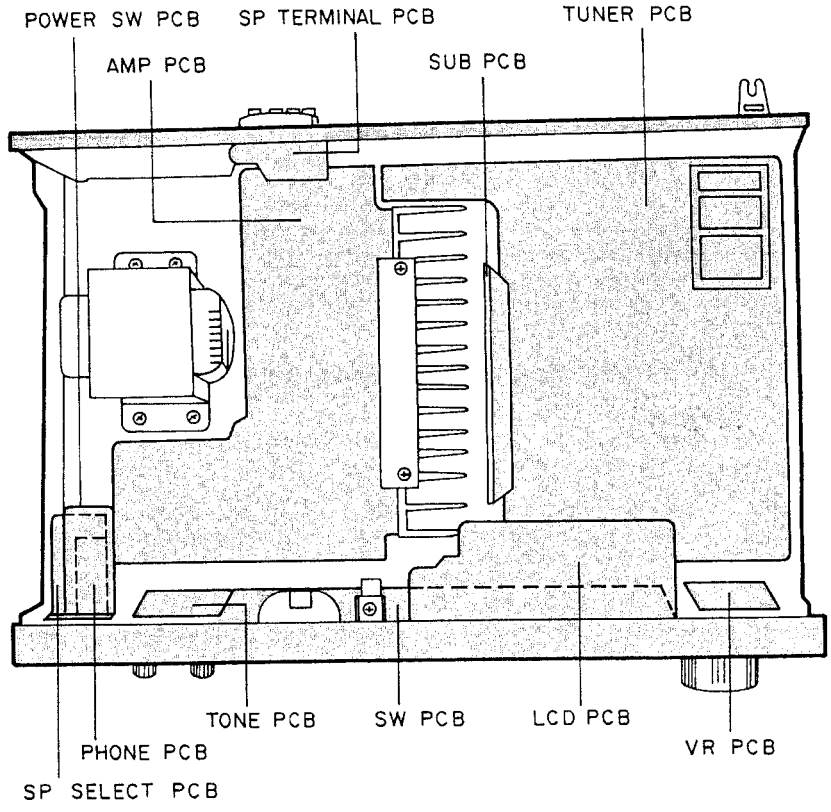


Fig. 3-1

IV. ELECTRICAL ADJUSTMENT

4-1. INSTRUMENT CONNECTIONS

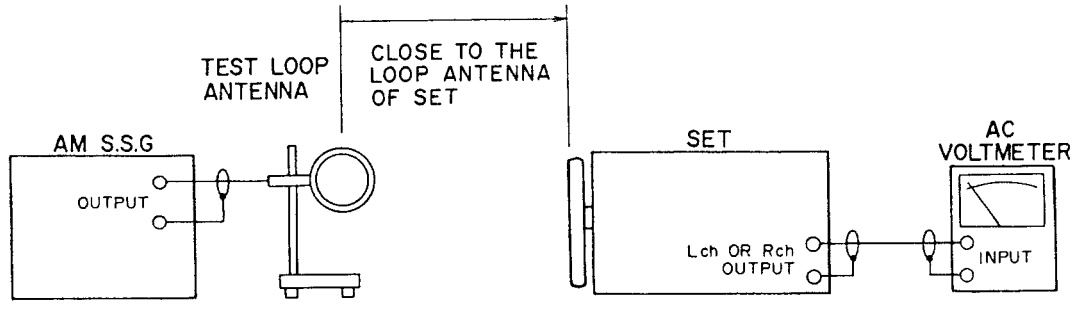


Fig. 4-1 Instrument connections for AM(MW/LW) section adjustment

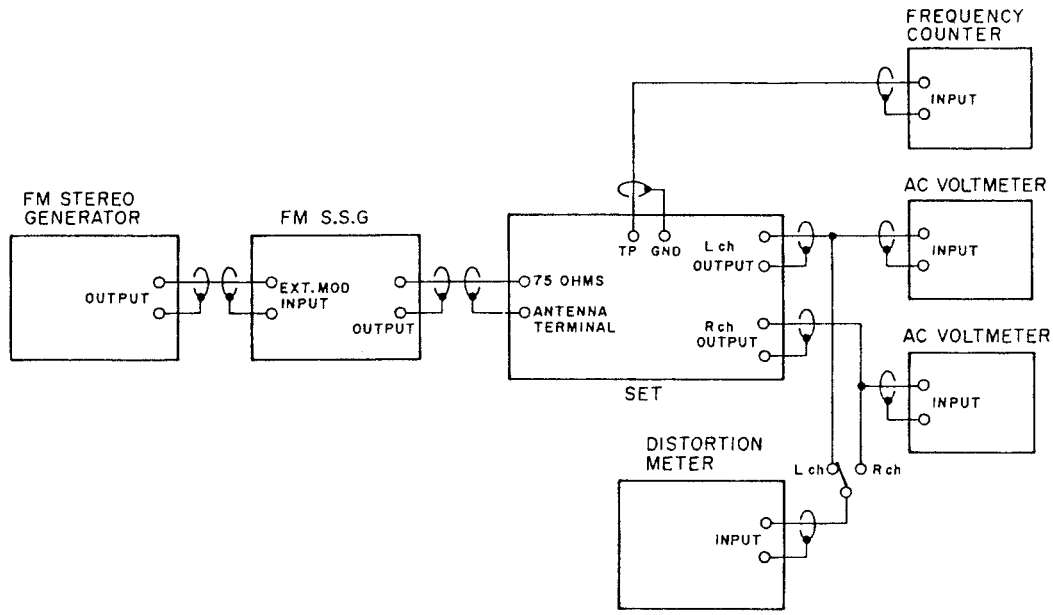


Fig. 4-2 Instrument connections for FM section adjustment

4-2. TUNER PCB ADJUSTMENT

Step	Adjustment item
1.	Input signal, S.S.G output level
2.	Tuning frequency
3.	Test point, ADJ. part
4.	• Remarks * Result

FM

NOTES:
1. Set the S.S.G to 1 kHz 75kHz deviation.
2. In step 4 normally confirmation only, except waved coil by mistake.
3. 0dBμ=1μV

4	TRACKING
1.	106.0 MHz(MONO), 15 dBμ
2.	106.0 MHz
3.	TAPE REC OUT, L1 and L3
4.	• Connect a distortion meter to TAPE REC OUT. * Minimum distortion(Less than 3.0 %)

1	TUNING VOLTAGE(FM OSC)
1.	87.5 MHz, 20 dBμ
2.	87.5 MHz
3.	R64, L4
4.	• Connect a DC digital voltmeter between R64 and GND. * DC 3.00 ± 0.05 V

3	FM IF
1.	98 MHz(MONO), 60dBμ
2.	98 MHz
3.	TAPE REC OUT, T1 and T3
4.	• Connect a distortion meter to TAPE REC OUT. * Minimum distortion(Less than 0.6 %)

7	STEREO SEPARATION
1.	98 MHz(STEREO), 60 dBμ (Input L ch. or R ch. only)
2.	98 MHz(STEREO mode)
3.	TAPE REC OUT, VR4
4.	• Connect an AC milli-voltmeter to TAPE REC OUT which opposite side channel of signal input channel. * Minimum output level

2	CENTER VOLTAGE
1.	No signal input
2.	Tune only noise without interference from broadcasting.
3.	Both ends of R26, T2
4.	• Connect a DC voltmeter between both end of R26. * DC 0 ± 0.05 V

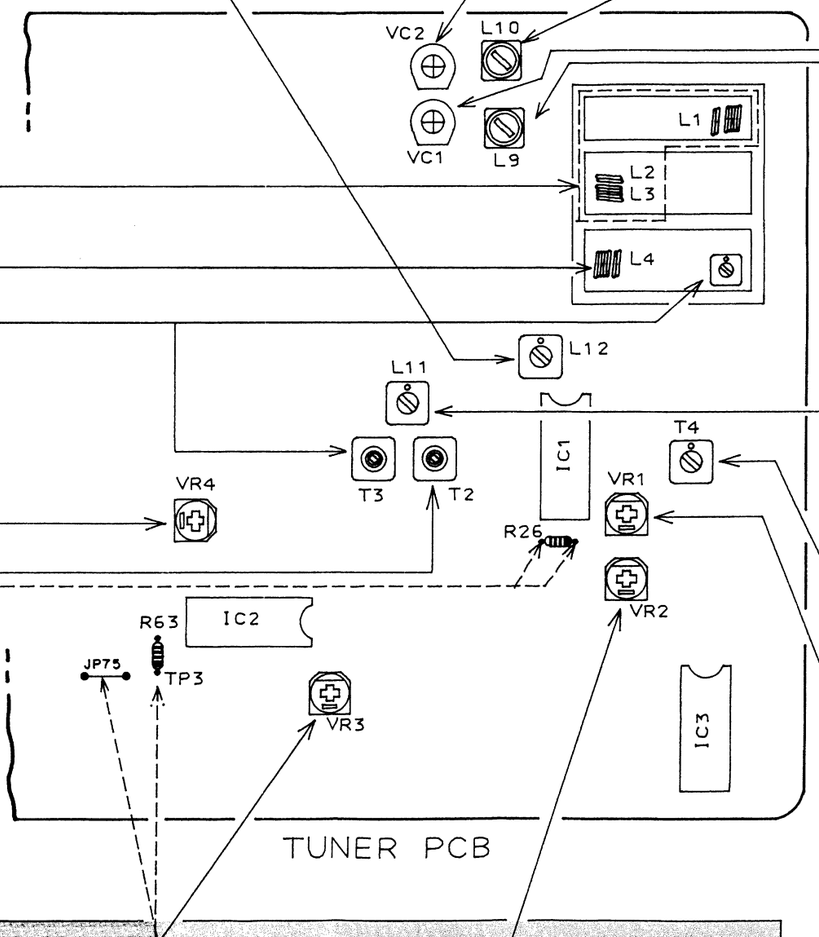
LW

For best result, Repeat 2 or 3 times.

1	TUNING VOLTAGE
1.	353 kHz, 55 dBμ
2.	353 kHz
3.	R64, L12
4.	• Connect a DC digital voltmeter between R64 and GND. * DC 8.4 ± 0.1 V

3	TRACKING(HIGH)
1.	350 kHz, 40 dBμ
2.	350 kHz
3.	TAPE REC OUT, VC2
4.	• Connect an AC milli-voltmeter to TAPE REC OUT. * Maximum output level

2	TRACKING(LOW)
1.	150 kHz, 40 dBμ
2.	150 kHz
3.	TAPE REC OUT, L10
4.	• Connect an AC milli-voltmeter to TAPE REC OUT. * Maximum output level



6	MPX(VCO)
1.	98 MHz(MONO), 60dBμ
2.	98 MHz(STEREO mode)
3.	R63(TP3), VR3
4.	• Connect a frequency counter btween R63(TP3) and GND. • Cut jumper wire(JP75). * 19.00 ± 0.05 kHz • After this adjustment connect jumper wire(JP75).

5	INDICATER LEVEL
1.	98 MHz, 25 dBμ
2.	98 MHz
3.	Display on the front panel, VR2
4.	• Just turned on the "TUNED" indicator * After this adjustment, confirm that "TUNED" indicator is turned off at 20dBμ input.

MW

NOTES:
1. Set the S.S.G to 1 kHz, 30% modulation.

3	TRACKING(HIGH)
1.	1404 kHz, 25 dBμ
2.	1404 kHz
3.	TAPE REC OUT, VC1
4.	• Connect an AC milli-voltmeter to TAPE REC OUT. * Maximum output level

For best result, Repeat 2 or 3 times.

2	TRACKING(LOW)
1.	603 kHz, 25 dBμ
2.	603 kHz
3.	TAPE REC OUT, L9
4.	• Connect an AC milli-voltmeter to TAPE REC OUT. * Maximum output level

1	TUNING VOLTAGE(MW OSC)
1.	1602 kHz, 37 dBμ
2.	1602 kHz
3.	R64, L11
4.	• Connect a DC digital voltmeter between R64 and GND. * DC 7.3 ± 0.1 V

4	MW IF
1.	999 kHz, 45 dBμ
2.	999 kHz
3.	TAPE REC OUT, T4
4.	• Connect an AC milli-voltmeter to TAPE REC OUT. * Maximum output level

5	TUNING INDICATOR
1.	999 kHz, 33 dBμ
2.	999 kHz
3.	Display on the front panel, VR1
4.	* Just turned on the "TUNED" indicator

V. PARTS LIST

ATTENTION

1. **When placing an order for parts, be sure to list Part No., Model No. and the description of eachpart. Otherwise, the non-delivery of the part or the delivery of a wrong part may result.**
2. **Please make sure that Part No. is correct when ordering. If not, a part different from the one you ordered may be delivered.**
3. **Since the parts shown in Parts List of Preliminary Service Manual may have been the subject of changes, please use this Parts List for all future reference.**

HOW TO USE THIS PARTS LIST

1. This Parts List lists those parts which are considered necessary for repairs. Other common parts, such as resistors and capacitors, are listed in the "Common List for Service Parts" from which these parts should be selected and stocked.
2. The Recommended Spare Parts List shows those parts in the Parts List which are considered particularly important for service.
3. Parts not shown in the Parts List and "Common List for Service Parts" will not in principle be supplied.
4. How to read the Parts List.

a) Mechanism Block

2. HEAD BASE BLOCK

REF. NO.	PART NO.	DESCRIPTION
1	BH-T2023A320A	HEAD BASE BLOCK
2	HP-H2206A010A	HEAD R/P PR4-8FU C
3	ZS-477876	PAN20×03STL CMT
4	ZS-536488	BID20×08STL CMT
5	ZG-402895	SP CS ANGLE ADJUST

SP (Service Parts) Classification

This number corresponds with the individual parts index number in that figure.

b) PC Board

6. MAIN PC BOARD

REF. NO.	PART NO.	DESCRIPTION
IC1	EI-324536	IC HD14049BP
IC2	EI-336801	IC MB8841-564M
C1A	EC-338399	C MMY V 223M 250AC [U,E,B,S]
C1B	EC-350949	C MMY V 223M 250DC [J]
C1C	EC-338397	C MMY V 223M 125AC [C,A]
X1	EI-318384	OSC X'TAL NC-18C

Symbols for primary destination

[A] : AAL (U.S.A) [S] : SAA (Australia)
[B] : BEAB (England) [U] : U/T (Universa
[C] : CSA (Canada) Area)
[E] : CEE (Europe) [V] : VDE (W. Germany)
[J] : JPN (Janan) [Y] : Custom Version

SP (Service Parts) Classification

These reference symbols correspond with component symbols in the Schematic Diagrams.

The available PC Board Blocks are listed separately.

5. When Part No. is known, Parts Index at end of Parts List can be used to locate where that part is shown in Parts List by its Reference No.listed at right of Part No.

WARNING

⚠(*) INDICATES SAFETY CRITICAL COMPONENTS. FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURE'S RECOMMENDED PARTS.

AVERTISSEMENT

⚠(*) IL INDIQUE LES COMPOSANTS CRITIQUES DE SÉCURITÉ. POUR MAINTENIR LE DEGRÉ DE SÉCURITÉDE L'APPAREIL, NE REMPLACER QUE DES PIÉCES RECOMMANDEES PAR LÉ FABRICANT.

1. RECOMMENDED SPARE PARTS

We suggest you to stock the following Recommended Spare Part items listed below since they can cover most of the routine service.

Ref. No.	Part No.	Description
1	*BT-730350J	TRANS POW (E) AA-V25L [E]
2	EC-357142	C DOUBLE LAYER EECW5R5F 473
3	ED-730394J	D LED SLR40MG3F [PHONO]
4	ED-307572	D SILICON H 1SS131
5	*ED-704547	D SILICON KBPC-802
6	*ED-730405J	D SILICON 2W02
7	ED-722346J	D VARACTOR SVC321SP [LW]
8	ED-381066J	D ZENER H HZ15E-B1
9	ED-308860	D ZENER H RD16E B
10	ED-318434	D ZENER H RD22E B2
11	ED-708797	D ZENER H RD6.2E B1
12	ED-707404	D ZENER H RD9.1E B2
13	*EF-359007	FUSE BET T 250V 1.25A [E]
14	*EF-359086	FUSE BET T 250V 4.00A
15	*EF-358641	FUSE BET T 250V 800MA
16	EH-367900	FILTER CE SFE10.7MA5 10.700MHZ
17	EH-723977J	FILTER CE SFE10.7MS3-A
18	EH-719331	FILTER CE SFZ450G
19	EI-730389J	IC AN7470
20	EI-367572	IC BA15218
21	EI-373980	IC BA15218N
22	EI-361624	IC LA1265
23	EI-353852	IC LA7016
24	EI-347120	IC SN74LS145N
25	*EI-366695	IC STK4172II
26	EI-349392	IC TC9164N
27	EI-363289	IC TC9172P
28	EI-363290	IC TC9302AF-011-BS
29	EI-723343J	OSC X'TAL 7200KHZ
30	EL-730399J	PL CORD 18V 200MA
31	EM-730398J	IND LCD LU1X629B
32	ES-730370J	SW PUSH [SURROUND SW]
33	ES-730400J	SW PUSH [SPEAKER A,B]
34	*ES-337902	SW PUSH SDDLD1 01-1
35	ES-730395J	SW TACT [1/9]
36	ET-363326	TR FET 2SK161 GR
37	ET-355556	TR FET 2SK241 Y
38	ET-337759	TR FET 2SK246 GR
39	ET-730392J	TR FET 2SK519 HO [LW]
40	ET-308867	TR 2SA1015 O,Y,GR
41	*ET-366365	TR 2SB1185 E,F
42	ET-389251J	TR 2SC1740S S F05
43	*ET-330225	TR 2SC1815 BL
44	ET-730391J	TR 2SC2668 O
45	ET-372102	TR 2SC2878 B [LW]
46	ET-360695	TR 2SD1302 S,T
47	*ET-366581	TR 2SD1762 E,F
48	EV-730390J	D VARACTOR SVC203SP
49	EV-730402J	VR ROTARY 100KX2 [TREBLE]
50	EV-730403J	VR ROTARY 100KX2 [MAIN VR]
51	EV-730404J	VR ROTARY 200KX2 [BALANCE]

2. P.C BOARD BLOCK

Ref. No.	Part No.	Description
1	BA-730369J	PC AMP BLK AA-V25L (E) [E]
2	BA-730372J	PC TUNER BLK AA-V25L

3. AMP P.C BOARD

Ref. No.	Part No.	Description
D311	ED-307572	D SILICON H 1SS131
D312	ED-318434	D ZENER H RD22E B2
D313	ED-318434	D ZENER H RD22E B2
D314	*ED-704547	D SILICON KBPC-802
D315	ED-307572	D SILICON H 1SS131
D316	ED-307572	D SILICON H 1SS131
D317	ED-308860	D ZENER H RD16E B
D318	ED-308860	D ZENER H RD16E B
D319	*ED-730405J	D SILICON 2W02
D320	ED-308860	D ZENER H RD16E B
D321	ED-307572	D SILICON H 1SS131
D322	ED-307572	D SILICON H 1SS131
D323	ED-307572	D SILICON H 1SS131
D324	ED-307572	D SILICON H 1SS131
D325	ED-307572	D SILICON H 1SS131
D326	ED-307572	D SILICON H 1SS131
F301	*EF-358641	FUSE BET T 250V 800MA
F401	*EF-359086	FUSE BET T 250V 4.00A
IC311	EI-373980	IC BA15218N
IC312	EI-373980	IC BA15218N
IC313	*EI-366695	IC STK4172II
Q311	*ET-366581	TR 2SD1762 E,F
Q312	*ET-366365	TR 2SB1185 E,F
Q313	*ET-330225	TR 2SC1815 BL
Q314	ET-308867	TR 2SA1015 O,Y,GR
Q315	ET-308867	TR 2SA1015 O,Y,GR
Q316	ET-330225	TR 2SC1815 BL
Q401	ET-360695	TR 2SD1302 S,T
R332	*ER-318248	R FUSE H S10 ERD2FC 1/4W 47R0G
R333	ER-302241	R CB H S10 FS RDS 1/4W 4R7J
R334	ER-322591	R CB H S10 FS RDS 1/4W 101J
R340	*ER-328278	R FUSE H ERD2FC 1/4W 10R0G
R343	*ER-328278	R FUSE H ERD2FC 1/4W 10R0G
R418	ER-341940	R OMF H S15 FS 1W 100J
R419	ER-311685	R CB H S15 FS RDS 1/2W 4R7J
R420	ER-307245	R OMF H S20 FS 2W 181J
SP-J2	EJ-730371J	SPEAKER TERMINAL 4P [SURROUND SPEAKER]
SW301	ES-730370J	SW PUSH [SURROUND SW]

4. TUNER P.C BOARD

Ref. No.	Part No.	Description
CF1	EH-367900	FILTER CE SFE10.7MA5 10.700MHZ
CF2	EH-723977J	FILTER CE SFE10.7MS3-A
CF3	EH-719331	FILTER CE SFZ450G
D1	EV-730390J	D VARACTOR SVC203SP
D2	EV-730390J	D VARACTOR SVC203SP
D3	EV-730390J	D VARACTOR SVC203SP
D4	ED-307572	D SILICON H 1SS131
D5	ED-307572	D SILICON H 1SS131
D6	ED-307572	D SILICON H 1SS131
D7	ED-307572	D SILICON H 1SS131
D8	ED-707404	D ZENER H RD9.1E B2
D9	ED-708797	D ZENER H RD6.2E B1
D10	ED-381066J	D ZENER H HZ15E-B1
D11	ED-722346J	D VARACTOR SVC321SP [LW]
D12	ED-722346J	D VARACTOR SVC321SP
D13	ED-307572	D SILICON H 1SS131 [LW]
D14	ED-307572	D SILICON H 1SS131
D15	ED-307572	D SILICON H 1SS131 [LW]
D16	ED-307572	D SILICON H 1SS131 [LW]
D18	ED-307572	D SILICON H 1SS131
D302	ED-307572	D SILICON H 1SS131
D303	ED-307572	D SILICON H 1SS131
IC1	EI-361624	IC LA1265
IC2	EI-730389J	IC AN7470
IC3	EI-363289	IC TC9172P
IC301	EI-367572	IC BA15218
L7	EO-337523	COIL FIX 1 TL-8 223J
L8	EO-337523	COIL FIX 1 TL-8 223J
L9	EO-730377J	COIL
L10	EO-730378J	COIL [LW]
L11	EO-730379J	COIL OSC [LW]
L12	EO-730380J	COIL OSC
AT-J3	EJ-730386J	ANT TERMINAL
P-J4	EJ-730387J	PIN JACK 8P [PHONE/CD/TAPE]
P-J5	EJ-730388J	PIN JACK 10P [MONI/VCR/V.DISC]
Q1	ET-355556	TR FET 2SK241 Y
Q2	ET-730391J	TR 2SC2668 O
Q3	ET-730391J	TR 2SC2668 O
Q4	ET-363326	TR FET 2SK161 GR
Q5	ET-730391J	TR 2SC2668 O
Q6	ET-389251J	TR 2SC1740S S F05
Q7	ET-389251J	TR 2SC1740S S F05
Q8	ET-389251J	TR 2SC1740S S F05
Q9	ET-389251J	TR 2SC1740S S F05
Q10	ET-389251J	TR 2SC1740S S F05
Q11	ET-389251J	TR 2SC1740S S F05
Q12	ET-337759	TR FET 2SK246 GR
Q13	ET-389251J	TR 2SC1740S S F05
Q14	ET-308867	TR 2SA1015 O,Y,GR
Q15	ET-389251J	TR 2SC1740S S F05
Q16	ET-308867	TR 2SA1015 O,Y,GR
Q17	*ET-366581	TR 2SD1762 E,F
Q18	*ET-366581	TR 2SD1762 E,F
Q19	ET-730392J	TR FET 2SK519 HO [LW]
Q20	ET-372102	TR 2SC2878 B [LW]
Q21	ET-389251J	TR 2SC1740S S F05 [LW]
Q22	ET-389251J	TR 2SC1740S S F05 [LW]
R81	*ER-328278	R FUSE H ERD2FC 1/4W 10R0G
R84	*ER-318647	R FUSE H S10 ERD2FC 1/4W 4R7J
R301	*ER-200746	R FUSE H ERD2FC 1/4W 1000G
R302	*ER-200746	R FUSE H ERD2FC 1/4W 1000G
T1	EO-730373J	COIL IFT 012-135
T2	EO-730374J	COIL IFT 192
T3	EO-730375J	COIL IFT 193
T4	EO-730376J	COIL IFT 0012-309
VC1	EC-730381J	C S-FIX H (A30-413)
VC2	EC-730381J	C S-FIX H (A30-413) [LW]
VR1	EV-730382J	R S-FIX H 20K
VR2	EV-730384J	R S-FIX H 50K
VR3	EV-730383J	R S-FIX H 5K
VR4	EV-730385J	R S-FIX H 500K

5. SUB P.C BOARD

Ref. No.	Part No.	Description
D301	ED-307572	D SILICON H 1SS131
IC302	EI-349392	IC TC9164N
IC303	EI-353852	IC LA7016
IC304	EI-367572	IC BA15218
Q301	ET-330225	TR 2SC1815 BL
Q302	ET-330225	TR 2SC1815 BL
Q303	ET-330225	TR 2SC1815 BL
Q304	ET-330225	TR 2SC1815 BL
R310	*ER-200746	R FUSE H ERD2FC 1/4W 1000G
R311	ER-333663	R CB H S15 FS RDS 1/2W 391J
R312	ER-333616	R CB H S15 FS RDS 1/2W 151J
R313	*ER-200746	R FUSE H ERD2FC 1/4W 1000G
R314	ER-333616	R CB H S15 FS RDS 1/2W 151J

6. LCD P.C BOARD

Ref. No.	Part No.	Description
C104	EC-357142	C DOUBLE LAYER EECW5R5F 473
D101	ED-307572	D SILICON H 1SS131
D102	ED-307572	D SILICON H 1SS131
D103	ED-307572	D SILICON H 1SS131
D105	ED-307572	D SILICON H 1SS131 [LW]
D107	ED-307572	D SILICON H 1SS131
IC101	EI-363290	IC TC9302AF-011-BS
L101	EO-345913	COIL FIX 1 LAL03KH 100K
LCD	EM-730398J	IND LCD LU1X629B
PL	EL-730399J	PL CORD 18V 200MA
Q101	ET-389251J	TR 2SC1740S S F05
X101	EI-723343J	OSC X'TAL 7200KHZ

7. SW P.C BOARD

Ref. No.	Part No.	Description
D111	ED-307572	D SILICON H 1SS131
D112	ED-307572	D SILICON H 1SS131
D113	ED-307572	D SILICON H 1SS131
D114	ED-307572	D SILICON H 1SS131
IC111	EI-347120	IC SN74LS145N
LD111	ED-730394J	D LED SLR40MG3F [PHONO]
LD112	ED-730394J	D LED SLR40MG3F [V.DISC/TV]
LD113	ED-730394J	D LED SLR40MG3F [TAPE]
LD114	ED-730394J	D LED SLR40MG3F [[CD]
LD115	ED-730394J	D LED SLR40MG3F [TUNER]
LD116	ED-730394J	D LED SLR40MG3F [VCR]
S111	ES-730395J	SW TACT [1/9]
S112	ES-730395J	SW TACT [2/10]
S113	ES-730395J	SW TACT [3/11]
S114	ES-730395J	SW TACT [4/12]
S115	ES-730395J	SW TACT [5/13]
S116	ES-730395J	SW TACT [6/14]
S117	ES-730395J	SW TACT [7/15]
S118	ES-730395J	SW TACT [8/16]
S119	ES-730395J	SW TACT [MEMORY]
S120	ES-730395J	SW TACT [TUNER]
S121	ES-730395J	SW TACT [UP]
S122	ES-730395J	SW TACT [DOWN]
S123	ES-730395J	SW TACT [ST/MONO]
S124	ES-730395J	SW TACT [PHONO]
S125	ES-730395J	SW TACT [CD]
S126	ES-730395J	SW TACT [TAPE]
S127	ES-730395J	SW TACT [VCR]
S128	ES-730395J	SW TACT [V.DISC/TV]

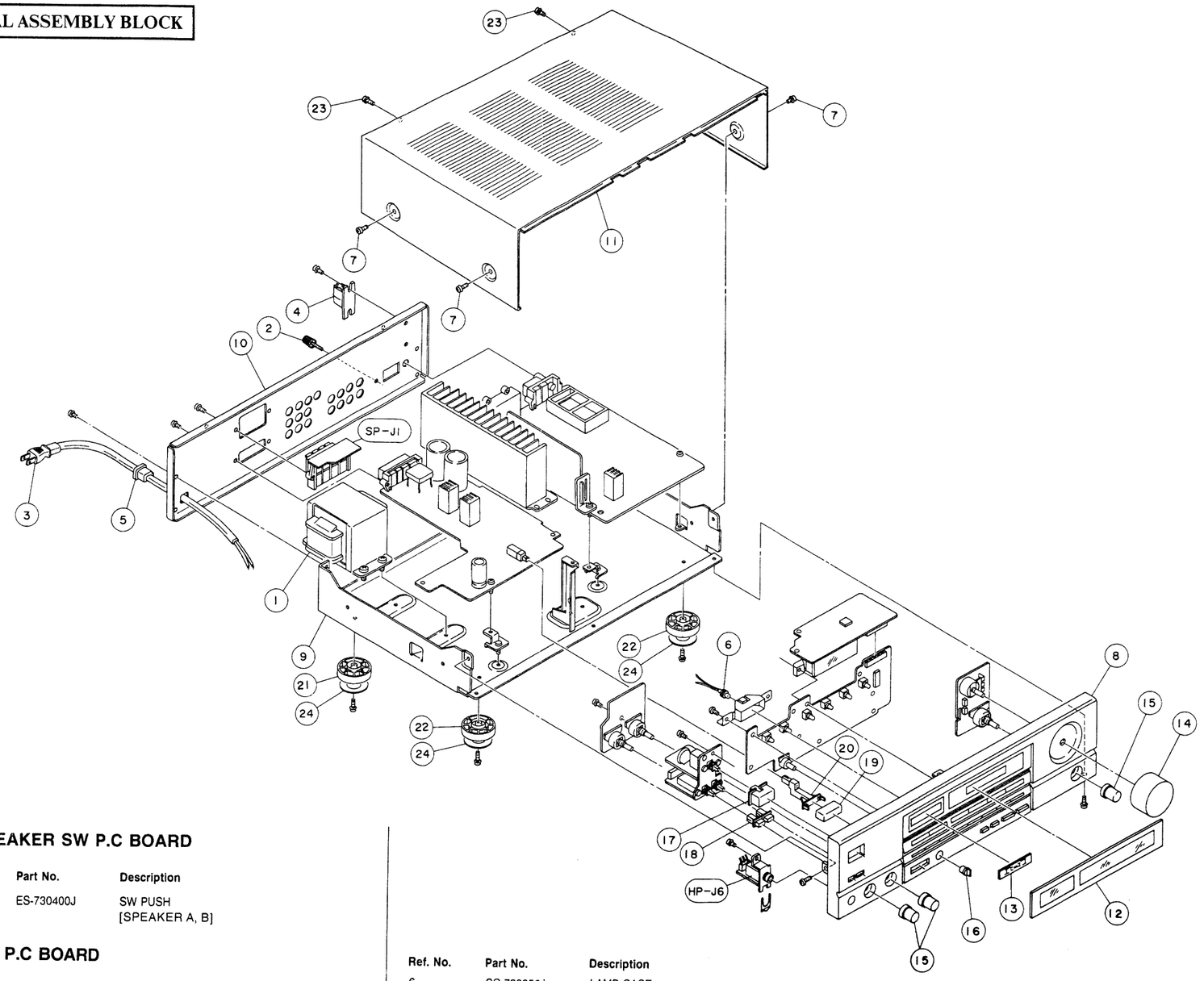
8. TONE P.C BOARD

Ref. No.	Part No.	Description
IC314	EI-373980	IC BA15218N
VR303	EV-730402J	VR ROTARY 100KX2 [TREBLE]
VR304	EV-730402J	VR ROTARY 100KX2 [BASS]

9. POWER SW P.C BOARD

Ref. No.	Part No.	Description
S304	*ES-337902	SW PUSH SDDLD1 01-1
F302	*EF-359007	FUSE BET T 250V 1.25A [E]

FINAL ASSEMBLY BLOCK



10. SPEAKER SW P.C BOARD

Ref. No.	Part No.	Description
S302	ES-730400J	SW PUSH [SPEAKER A, B]

11. VR P.C BOARD

Ref. No.	Part No.	Description
VR301	EV-730403J	VR ROTARY 100KX2 [MAIN VR]
VR302	EV-730404J	VR ROTARY 200KX2 [BALANCE]

12. FINAL ASSEMBLY

Ref. No.	Part No.	Description
1	*BT-730350J	TRANS POW (E) AA-V25L [E]
2	EJ-722929T	TERMINAL EARTH
3A	*EW-347897	AC CORD 2 CORES VM0364,LCFL EV
3B	*EW-347898	AC CORD 2 CORES VM-0436,LCFL S
3C	*EW-374894	AC CORD 2C VM-0129A,VFF U/T
4	SZ-730355J	HOLDER LOOP ANT
5	*EZ-371605	BUSH CORD 2271
6	SC-730356J	LAMP CASE
7	ZS-730406J	SCREW DT-BFR30X08SBK
8	SP-730357J	PANEL FRONT AA-V25
11	SC-730407J	UPPER COVER AA-V25
12	SE-730358J	WINDOW DISPLAY
13	SE-730359J	PLATE SURROUND
14	SK-730360J	KNOB VOLUME
15	SK-730361J	KNOB TONE
16	SK-730362J	KNOB EFFECT
17	SK-730363J	KNOB POWER
18	SK-730364J	KNOB SPEAKER SW
19	SK-730365J	KNOB SURROUND
20	MZ-730366J	SWITCH JOINT
21	SA-730367J	FOOT (REAR)
22	SA-730368J	FOOT (FRONT)
23	ZS-305827	ST BID30X06STL BNI
24	SA-730349J	CUSHION FOOT
HP-J6	EJ-357090	PHONE J 3P YKB22-5010 W/NUT
SP-J1	EJ-730401J	SPEAKER TERMINAL 8P

NOTE:
Parts will not be supplied if they are not listed in the parts list, even if they appear on the assembling illustrations with reference No.

13. ACCESSARY

Ref. No.	Part No.	Description
1	EE-730354J	ANT LOOP
2	EE-315329	ANT DIPOLE SAE-010
3	EJ-352118	SOCKET COAX PAL B2-714P-900

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EC-357142	1-2
EC-357142	6-C104
EC-730381J	4-VC1
EC-730381J	4-VC2
ED-307572	1-4
ED-307572	3-D311
ED-307572	3-D315
ED-307572	3-D316
ED-307572	3-D321
ED-307572	3-D322
ED-307572	3-D323
ED-307572	3-D324
ED-307572	3-D325
ED-307572	3-D326
ED-307572	4-D4
ED-307572	4-D5
ED-307572	4-D6
ED-307572	4-D7
ED-307572	4-D13
ED-307572	4-D14
ED-307572	4-D15
ED-307572	4-D16
ED-307572	4-D18
ED-307572	4-D302
ED-307572	4-D303
ED-307572	5-D301
ED-307572	6-D101
ED-307572	6-D102
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ER-200746	5-R313
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ES-730395J	7-S127
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ET-389251J	4-Q8
ET-389251J	4-Q9
ET-389251J	4-Q10
ET-389251J	4-Q11
ET-389251J	4-Q13
ET-389251J	4-Q15
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ET-389251J	4-Q22
ET-389251J	6-Q101
ET-730391J	1-44
ET-730391J	4-Q2
ET-730391J	4-Q3
ET-730391J	4-Q5
ET-730392J	1-39
ET-730392J	4-Q19
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EV-730383J	4-VR3
EV-730384J	4-VR2
EV-730385J	4-VR4
EV-730390J	1-48
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EV-730390J	4-D2
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EV-730402J	8-VR303
EV-730402J	8-VR304
EV-730403J	1-50
EV-730403J	11-VR301
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MZ-730366J	12-20
SA-730349J	12-24
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SC-730407J	12-11
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AKAI

MODEL AA-V25L

SCHEMATIC DIAGRAMS AND PC BOARDS

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5. TUNER & SUB PC BOARD 7
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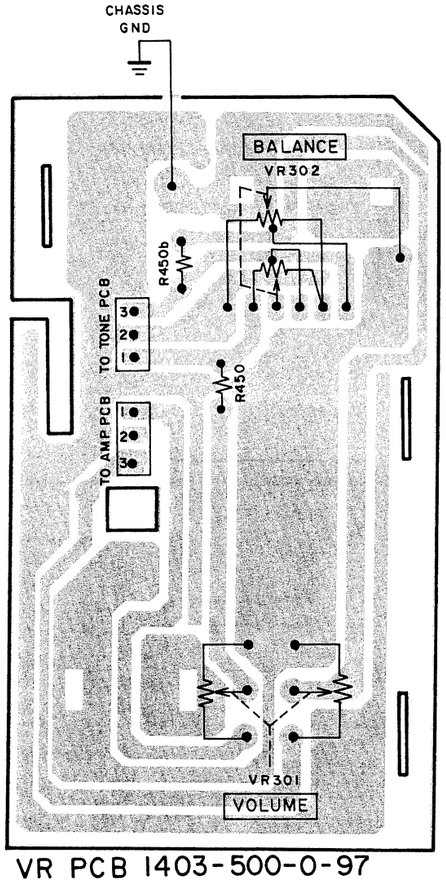

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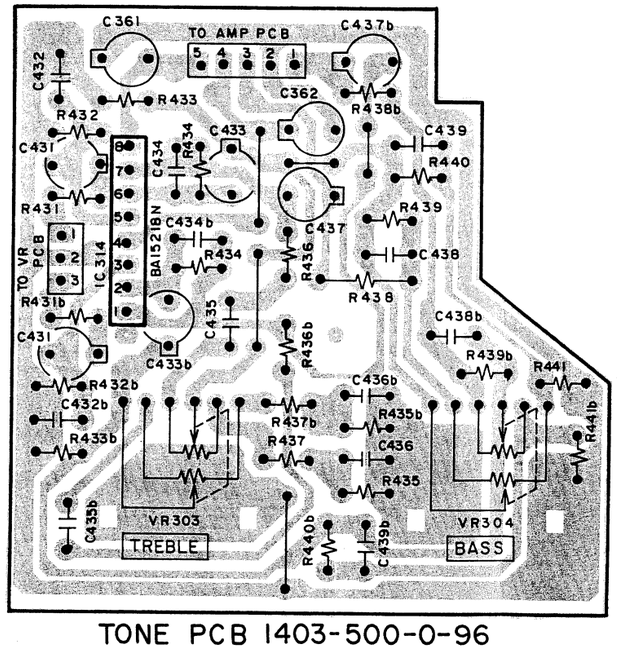

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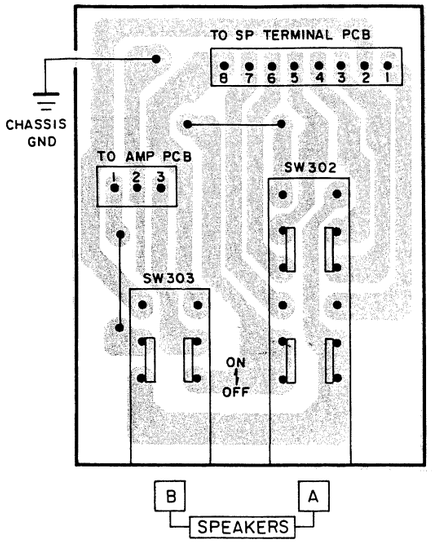
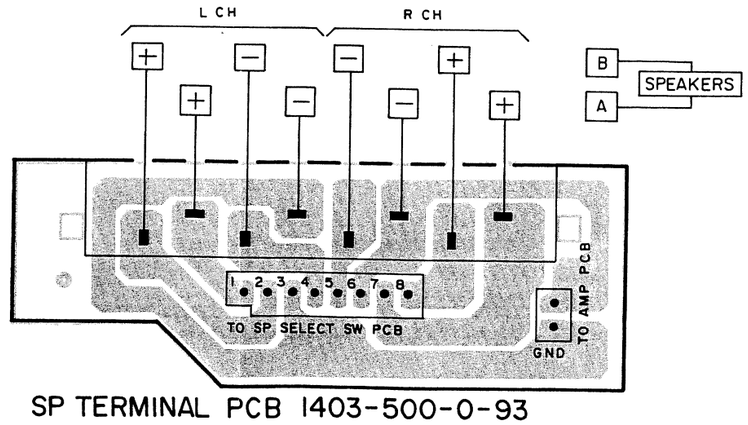


SP SELECT PCB
1403-500-0-95



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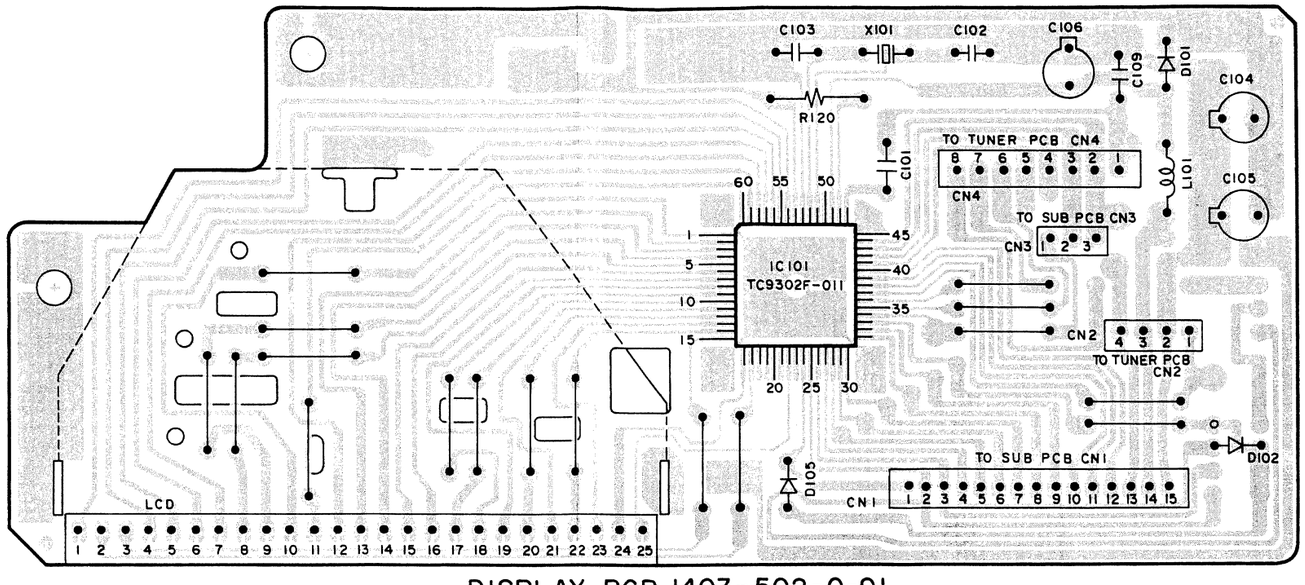

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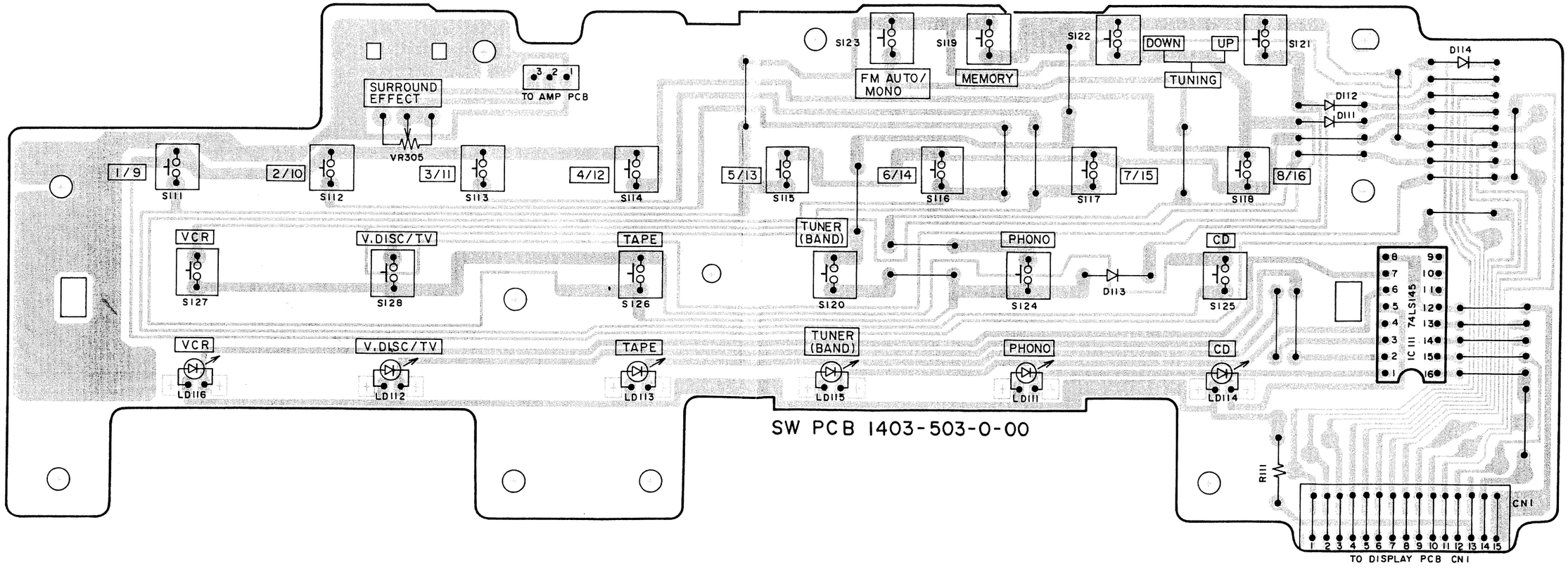


SW PCB 1403-503-0-00

IN101 LU1X629B
TUNED
STEREO
MONO
SCAN
AM
SW
LW
MEMO
KHz
MHz
IC101
TC9302F-011
CN1
KEY IN
STROBE OUT
DIGIT1
DIGIT2
DIGIT3
DIGIT4
DIGIT5
CN2
MUTE
GND
+6V
+15V
CN3
CN4
REF
DATA
CK
STB
MONO
TUNE
ST
DISPLAY PCB 1403-502-0-91
FM (75Ω)
ANT
AM (LOOP)
PHONO
CD
PLAY
TAPE
REC
V.DISC
AUDIO
VCR
A.PB
A.REC
VIDEO
PB
MONITOR OUT
TUNER PCB
1403-501-0-91
SUB PCB
1403-501-0-92
CN5
CN6
LCH
RCH
AMP PCB
1403-500-091
VOLUME
BALANCE
VR301 100K (A) X2
VR302 200K (G)
VR PCB
1403-500-097
IC314
BA15218N
TONE PCB 1403-500-096

*:Each DC voltage shows the value in volts at no input signal.
(Input selector : CD position)

B (POWER SUPPLY) LINE

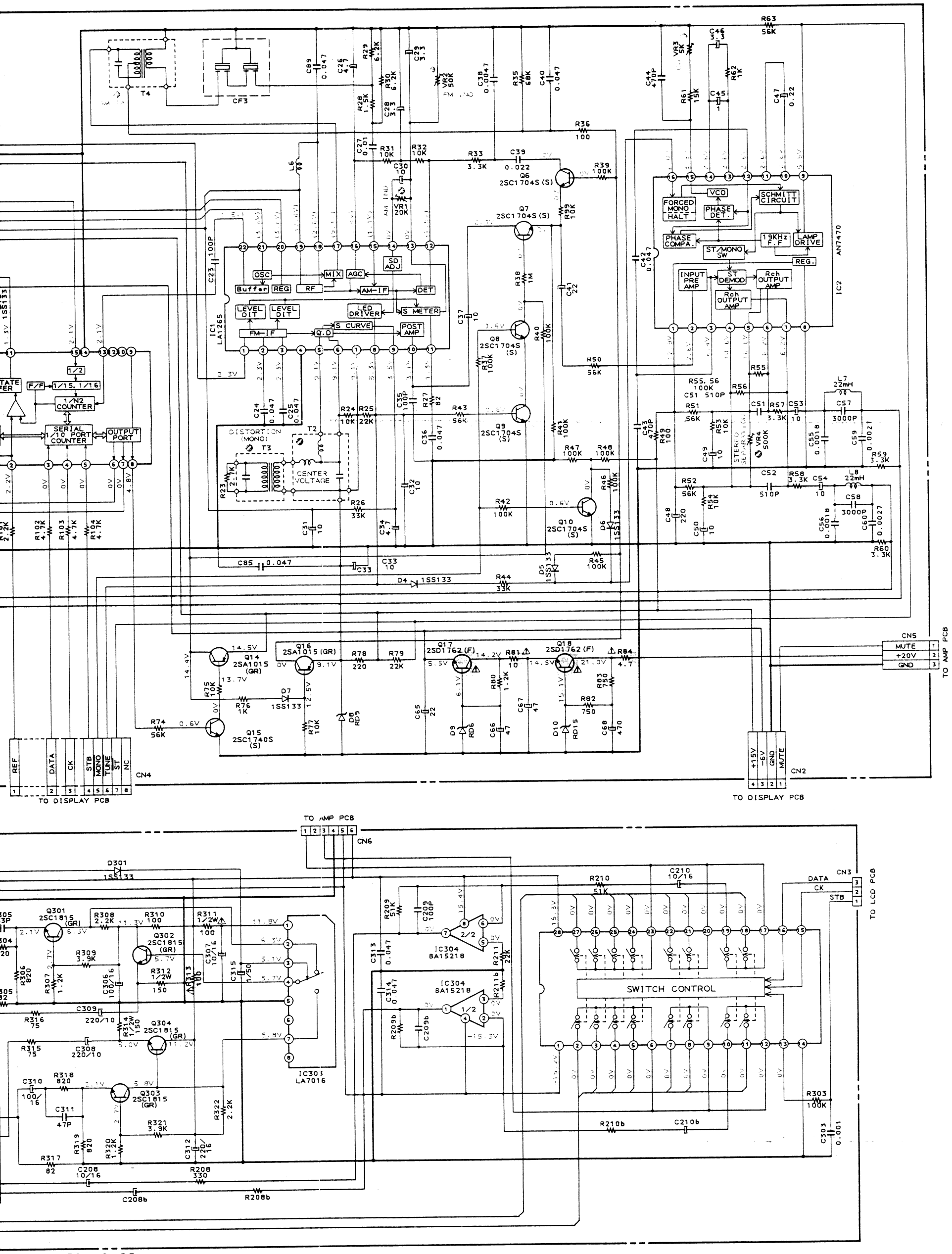
SIGNAL LINE

WARNING: ⚠ AND ~ INDICATE SAFETY CRITICAL COMPONENTS FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS

AVERTISSMENT: ⚠ ET ~ , ILS INDIQUENT LES COMPOSTANTS CRITIQUES DE SÉCURITÉ. POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL, NE REMPLACER QUE DES PIÈCES RECOMMANDEES PAR LE FABRICANT

AA-V25L
CONNECTION DIAGRAM
NO. 3-1 AA01501M

FM (75Ω)
ANT
AM (LOOP)
FM TRACKING L1
Q1 2SK241 (Y)
L2 L3
R2 47
D1 SVC203SP
D2 SVC203SP
C1 27P
C2 27P
C3 27P
C4 27P
C5 15P
C6 1P
C7 100P
C8 5P
L5 2.2μH
R1 100K
R4 100K
R6 1M
C18 0.01
R3 100
C17 0.001
Q2 2SC2668 (O)
T1
R15 47
R8 10K
C88 0.01
CF1
CF2
C19 0.01
Q5 2SC2668 (O)
R16 560
R17 3.3K
R18 6.8K
C20 0.01
R19 1K
C21 0.01
R21 150
R22 330
C22 0.01
R20 100
C87 0.022
C86 22
FM TUNING VOLTAGE
L4
D3 SVC203SP
C9 6P
C10 10P
C11 10P
C12 10P
C13 33P
C14 22P
C15 0.01
R9 10K
R10 10K
R11 10K
R12 100
R13 3.3K
Q3 2SC2668 (O)
Q4 2SK161 (GR)
R14 560
C16 0.001
MW TRACKING (LOW)
L9
MW TRACKING (HIGHT)
D11 SVC3210SP
VC1
C71 5P
Q19 2SK519 (H)
R86 1M
C72 0.047
R88 1K
C73 0.01
LW TRACKING (LOW)
L10
VC2
C69
C70 0.047
Q20 2SC2878 (B)
R89 10K
R87 1.5K
LW TRACKING (HIGHT)
L11
MW TUNING VOLTAGE
LW TUNING VOLTAGE
L12
R90 220K
R91 220K
C75 82P
C76 510P
C77 270P
C78 0.022
D12 SVC3210SP
D13 1SS133
D14 1SS133
D15 1SS133
D16 1SS133
C74 12P
R92 10K
R93 56K
R94 3.3K
R95 10K
R96 56K
Q21 2SC1740S (S)
Q22 2SC1740S (S)
C79 0.022
R64 10K
R65 10K
R66 3.3K
R67 47K
C63 0.47
R70 560
R85 330
R71 47K
R72 47K
R73 10K
C64 0.01
D18 1SS133
C61 0.001
C62 0.047
Q11 2SC1740S (S)
R69 560
Q12 2SK246 (GR)
Q13 2SC1740S (S)
R68 330
IC3 TC-9172
TR1-STATE BUFFER
IF COUNTER 15 BIT
R101 2.2K
REF
IC301 BA15218
1/2
2/2
R201 330
C201 1/50
R203 62
R204 68K
R205 3.3K
C202 100P
R202 56K
C203 100/10
C204 0.082
C205 0.022
R206 10K
C206 10/16
C301 47/16
R301 100
C204b
C205b
R204b
R205b
C202b
R202b
C203b
R206b
C301b
R203b
C206b
R201b
C201b
R301b
+14.7V
-14.7V
PHONO
CD
PLAY
REC
V.DISC
A.PB
VCR
A.REC
AUDIO
VIDEO
P.B
MONITOR OUT
C207 2.2/50
R207 220K
C207b
R207b
D302 1SS133
D303 1SS133
VIDEO CONT
+15V
-15V
GND
TAPE (REC)
TUNER
N.C
V.DISC
VCR (P.B)
TAPE (PLAY)
L CH
R CH
VCR (REC)
C305 33P
R304 820
R305 82
C304 100/16
R306
SUB PCB
TUNER PCB 1403-501-0-91



1403-501-0-92

NOTE
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS 1/ W( )
ALL CAPACITORS IN μF WV( )

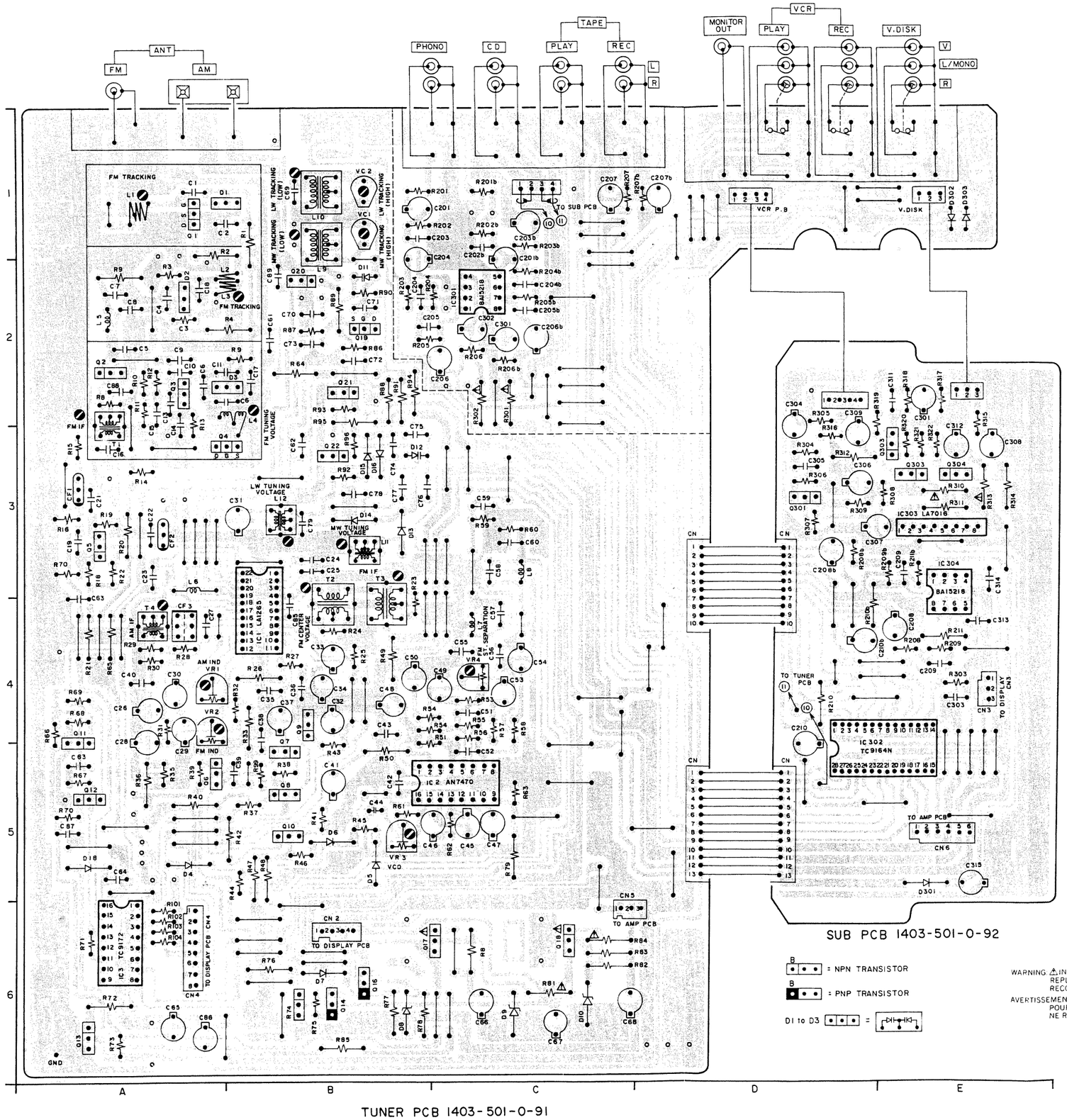
B (POWER SUPPLY) LINE

SIGNAL LINE

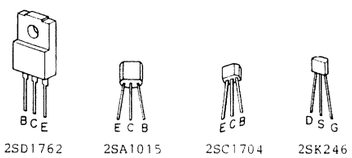
WARNING: ⚠ AND INDICATE SAFETY CRITICAL COMPONENTS FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS

AVERTISSMENT: ⚠ ET , ILS INDIQUENT LES COMPOSTANTS CRITIQUES DE SÉCURITÉ, POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL, NE REMPLACER QUE DES PIÈCES RECOMMANDEES PAR LE FABRICANT

AA-V25L
TUNER & SUB PCB
SCHEMATIC DIAGRAM
NO. 3-2 AA01502M



TUNER PCB 1403-501-0-91



2SD1762 | 2SA1015 2SC1815 | 2SC1704 2SC1740 2SC2878 | 2SK246 2SK241

SUB PCB 1403-501-0-92

LOCATION OF COMPONENT

ICS
IC1.....B4
IC2.....C5
IC3.....A6
IC301.....C2
IC302.....D,E4
IC303.....E3

TRANSISTORS
Q1.....A1
Q2.....A2
Q3.....A2
Q4.....A3
Q5.....A3
Q6.....A5
Q7.....B5
Q8.....B5
Q9.....B4
Q10.....B5
Q11.....A4.5
Q12.....A5
Q13.....A6
Q14.....B6
Q15.....B6
Q17.....C6
Q18.....C6
Q19.....B2
Q20.....B2
Q21.....B2
Q22.....B3

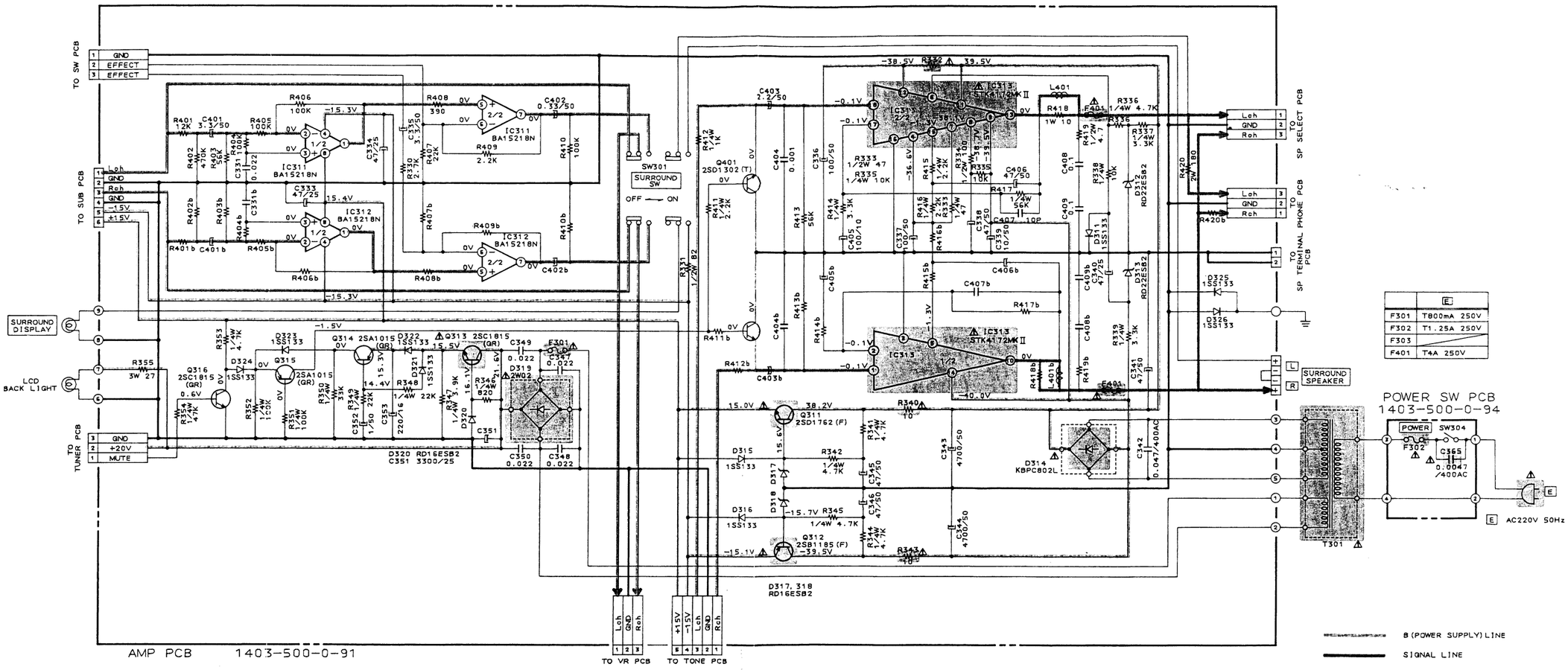
B = NPN TRANSISTOR

B = PNP TRANSISTOR

D1 to D3 =

WARNING ⚠ INDICATES SAFETY CRITICAL COMPONENTS. FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS.

AVERTISSEMENT ⚠ IL INDIQUE LES COMPOSANTS CRITIQUES DE SÉCURITÉ. POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL, NE REMPLACER QUE DES PIÈCES RECOMMANDÉES PAR LE FABRICANT



	E
F301	T800mA 250V
F302	T1.25A 250V
F303	
F401	T4A 250V

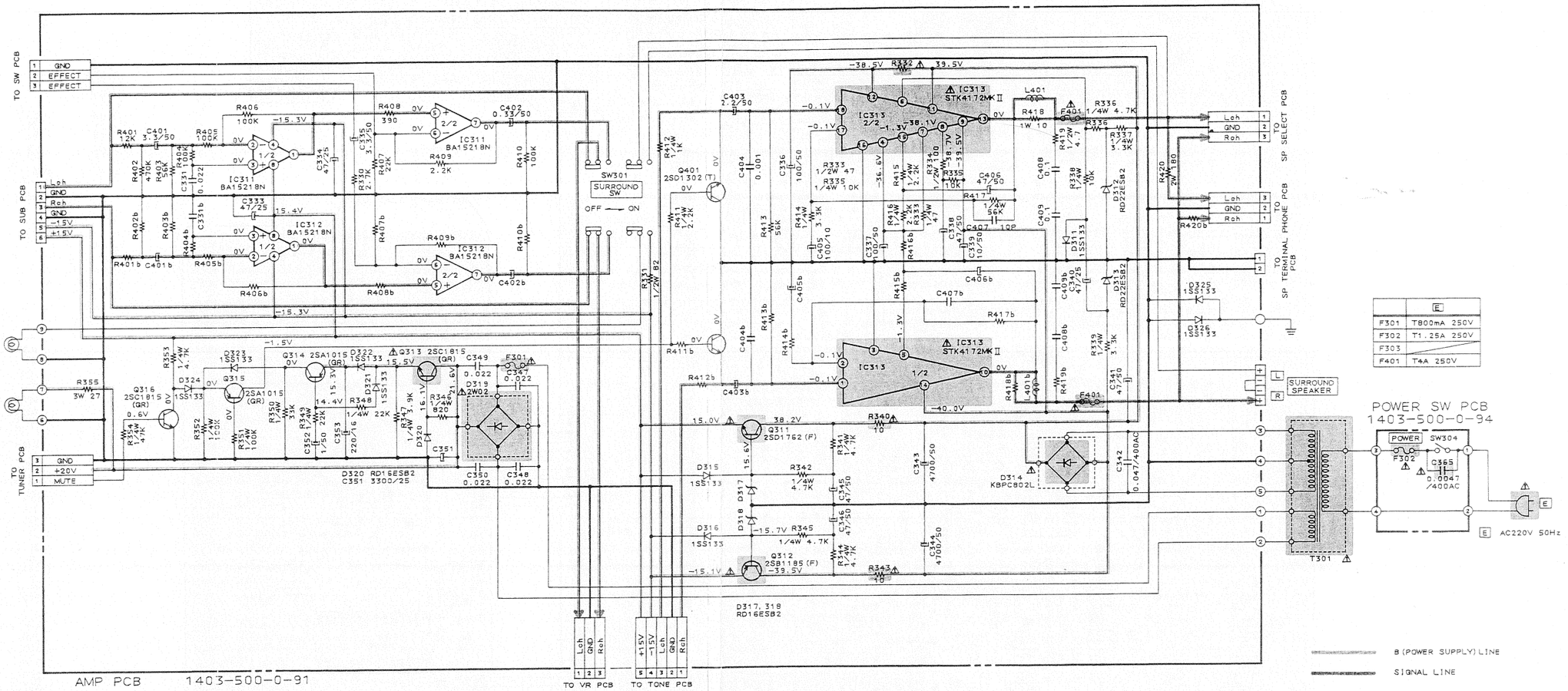
NOTE
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS 1/6W(J)
ALL CAPACITORS IN μF 50WV( )

* Each DC voltage shows the value in volts at no input signal. (Input selector : PHONO position)

WARNING: ⚠ AND ▨ INDICATE SAFETY CRITICAL COMPONENTS FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS

AVERTISSMENT: ⚠ ET ▨, ILS INDIQUENT LES COMPOSTANTS CRITIQUES DE SÉCURITÉ. POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL, NE REMPLACER QUE DES PIÈCES RECOMMANDEES PAR LE FABRICANT

AA-V25L
AMP & POWER SW PCB SCHEMATIC DIAGRAM
NO. 3-3 AA01503M



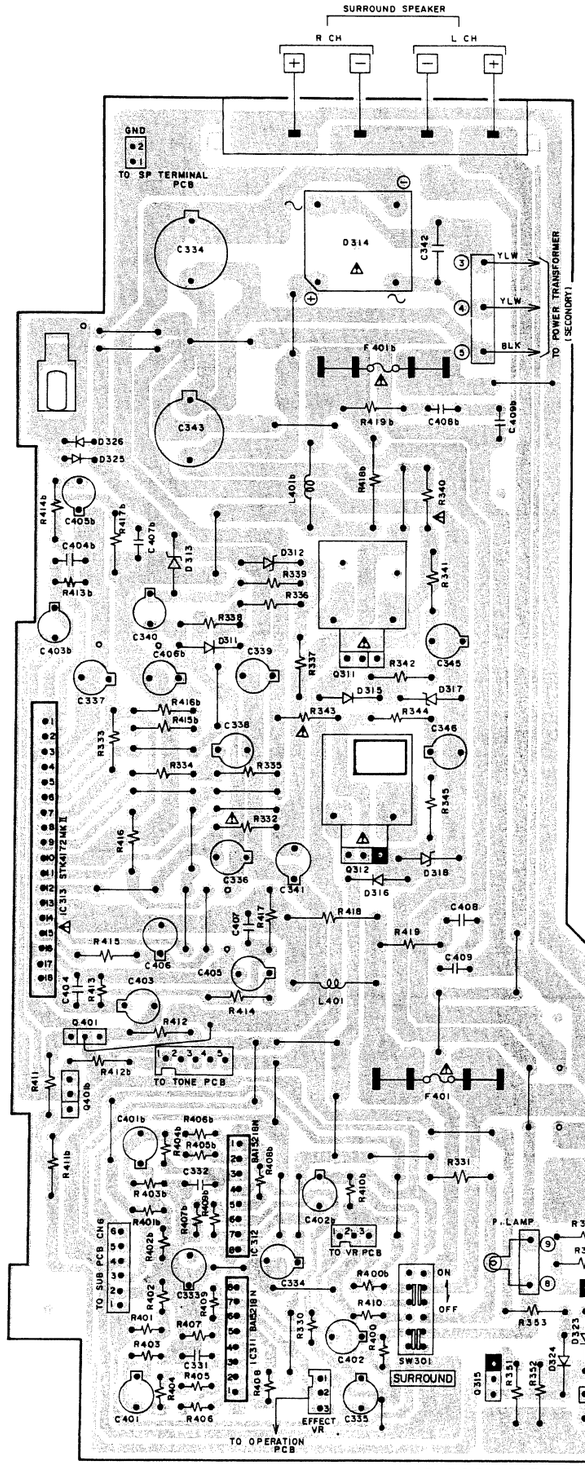
NOTE
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS 1/6W(J)
ALL CAPACITORS IN μF 50WV( )

* Each DC voltage shows the value in volts at no input signal. (Input selector : PHONO position)

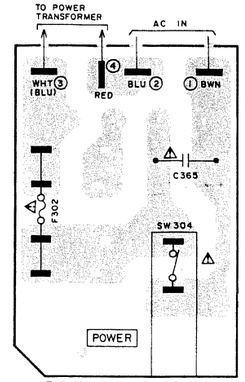
WARNING: ⚠ AND [redacted] INDICATE SAFETY CRITICAL COMPONENTS FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS

AVERTISSMENT: ⚠ ET [redacted], ILS INDIQUENT LES COMPOSTANTS CRITIQUES DE SÉCURITÉ. POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL, NE REMPLACER QUE DES PIÈCES RECOMMANDEES PAR LE FABRICANT

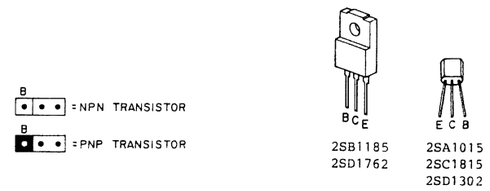
AA-V25L
AMP & POWER SW PCB SCHEMATIC DIAGRAM
NO.3-3 AA01503M



AMP PCB 1403-500-0-91



POWER SW PCB
1403-500-0-94



2SB1185
2SD1762

2SA1015
2SC1815
2SD1302

PHONE PCB
1403-500-0-92

WARNING. ⚠ INDICATES SAFETY CRITICAL COMPONENTS. FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS

AVERTISSEMENT: ⚠ IL INDIQUE LES COMPOSANTS CRITIQUES DE SÉCURITÉ. POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL, NE REMPLACER QUE DES PIÈCES RECOMMANDÉES PAR LE FABRICANT

TUNER PCB

FM
ANT
AM
Q1, D1, 2
L1, 2, 3
FM TUNING
Q2
MIX
fosc
fc
Q3, D3
L4
FM VCO
Q5
AMP
CF1
CF2
10.7MHz
IF(10.7MHz)FILTER
T2, 3
DET. COILS
IC1
LA1265
FM IF
Q.D
S CURVE
POST AMP
BUFFER
OSC
MIX
DET
REG
RF
AGC
IM-IF
S-METER
AM (MW/LW) TUNING
AM (MW/LW) VCO
L11, 12
AM IF
T4.CF3
VR1
VR2
Q4
AMP
TUNING CONTROL VOLTAGE
Q11, 12
LPF
+5V
IC3
TC9172
TRI-STATE BUFFER
F/F
1/2
1/15 / 1/16
1/N2 COUNTER
IF COUNTER 15 BIT
SERIALR 1/10 PORT COUNTER
OUTPUT PORT
REF
DATA
CLOCK
STROBE1
Q13
INV
FM
Q15
POWER SUPPLY FOR AM SECTION (+B AM)
POWER SUPPLY FOR FM SECTION (+B FM)
Q16
AM:ON
Q14
FM:ON
+12V
+5V
Q17, D9
+5V REG
Q18
D10
+12V REG
+20V
+BFM
+BAM
Q7
FM:ON
Q8
MONO
Q9
TUNED
Q6
AM:ON
Q10
INV
VR3 19KHz
IC2
AN7470
VCO
PHASE COMP
LAMP DRIVE
ST./MONOSW
FORCED MONO
PREAMP
STEREO DEMOD
LCH POST AMP
RCH POST AMP
VR4
ST. SEPARATION
RCH OUT
LC DISPLAY
SEGMENT DATA
IC101
TC9302F-11
SYSTEM CONTROL
ONE CHIP MI-COM
ST
MONO
TUNED
MUTE
KEY RETURN
KEY STROBE
STROBE1
CLOCK
DATA
REF
STROBE2
IC111 74LS145
BCD to DECIMAL DECODER
+12V
R111
LD111 PHONO
LD112 V.DISC /TV
LD113 TAPE
LD114 CD
LD115 TUNER (BAND)
LD116 VCR
TS111 to 128
OPERATION KEY MATRIX
LCD PCB
SW PCB

PHONO
IC301
BA15218
PHONO AMP
RIAA EQ
TUNER (L)
IC302
TC9164N
SW CONTROL
CD
TAPE (PLAY)
VCR (PLAY)
V.DISK
(AUDIO)
TAPE (REC)
VCR (REC)
RCH
IC304
BA15218
BUFFER
IC303 LA7016
Q301
Q304
Q303
Q302
(VIDEO)
MONITOR
SUB PCB
IC311 BA15218
AMP
SURROUND EFFECT
VR305
R CH
ON ↔ OFF
SURROUND
AMP PCB
VR301
VR302
VOLUME
BALANCE
1/2 IC314
BA15218
TONE AMP
VR304, VR303
BASS
TREBLE
VR PCB
TONE PCB
1/2 IC313
STK4127MKII
POWER AMP
F401
Q401
MUTE
SW302
A
B
SPEAKER A (L CH)
SPEAKER B (L CH)
SP SELECT PCB
SP TERMINAL PCB
(L CH)
SURROUND SPEAKER
(R CH)
Q314, 315
POWER ON/OFF DETECTOR
Q313
+15V REG
F301
D319
FROM POWER TRANSFORMER
Q311, D317
+15V REG
D314
Q312, D318
-15V REG

AA-V25L
BLOCK DIAGRAM
NO. AA01551M

ABBREVIATIONS FOR SERVICE MANUAL

ABBREVIATION	EXPLANATION	ABBREVIATION	EXPLANATION
AFC	Auto Frequency Control	MEMO	MEMOry
AGC	Auto Gain Control	MI-COM	MIcro-COMputer
ALC	Auto Level Control	MIN	MINimum
AM	Amplitude Modulation	MIX	MIXing
AMP	AMPlifier	MPX	MultiPleX
ANT	ANTenna	MW	Medium Wave (frequency)
BATT	BATTery	NC	No Connection
BLK	BLocK	NFB	Negative Feed Back
BUFF	BUFFer	OSC	OSCillator
COMP	COMParator	PCB	Printed Circuit Board
DET	DETect (DETector)	PLL	Phase Locked Board
FLD		QD	Quadrature Detector
FM	Frequency Modulation	Rch	Right channel
FREQ	FREQuency	REF	REFerence
GND	GrouND	REG	REGulator
H	High	RF	Radio Frequency
HPF	High Pass Filter	SEG	SEGment
IF	Intermediate Frequency	SELE	SELEctor
IHF	Institute of High Fidelity	SENS	SENSitivity
IND	INDicator	SIG	SIGnal
I/O	In/Out	S/N	Signal to Noise Ratio
JW	Jumper Wire	SSG	Standard Signal Generator
L	Low	STD	STanDard
LCD	Liquid Crystal Display	SW	SWitch: Short Wave (frequency)
Lch	Left channel	THD	Total Harmonic Distortion
LED	Light Emitting Diode	TP	Test Point
LPF	Low Pass Filter	VCO	Voltage Controlled Oscillator
LW	Long Wave (Frequency)	VR	Variable Resistor
		X'TAL	Crystal

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